

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/445,963

---

**AMENDMENTS TO THE CLAIMS:**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

Claims 1-9 (canceled).

10. (previously presented): A method for detecting and treating a malignant tumor, which method comprises;

administering a tumor detecting effective amount, to a host in need of detection of a malignant tumor, of 5-aminolevulinic acid or a derivative thereof in which at least one carbon atom of said 5-aminolevulinic acid is a carbon isotope and/or a nitrogen atom in its amino group is a nitrogen isotope, and where said derivative is an ester, amide, salt, hydrate or solvate of said 5-aminolevulinic acid;

detecting the malignant tumor using NMR; and

administering an effective amount of said 5-aminolevulinic acid or derivative thereof, in which at least one carbon atom of said 5-aminolevulinic acid is a carbon isotope and/or a nitrogen atom in its amino group is a nitrogen isotope, and where said derivative is an ester, amide, salt, hydrate or solvate of said 5-aminolevulinic acid, to kill said malignant tumor.

21. (previously presented): The method of claim 10 wherein said 5-aminolevulinic acid or derivative thereof is used in combination with a diagnostically acceptable carrier.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/445,963

*3* 12. (previously presented): A method for detecting and treating a malignant tumor, which method comprises;

administering a tumor detecting effective amount, to a host in need of detection of a malignant tumor, of a 5-aminolevulinic acid or a derivative thereof in which at least one carbon atom of said 5-aminolevulinic acid is a carbon isotope and/or a nitrogen atom in its amino group is a nitrogen isotope, and where said derivative is an ester, amide, salt, hydrate or solvate of said 5-aminolevulinic acid to thereby accumulate the carbon isotope and/or the nitrogen isotope in the malignant tumor;

detecting the carbon and/or the nitrogen isotope using NMR to thereby identify the position of the malignant tumor; and

administering an effective amount of said 5- aminolevulinic acid or a derivative thereof, in which at least one carbon atom of said 5- aminolevulinic acid is a carbon isotope and/or a nitrogen atom in its amino group is a nitrogen isotope, and where said derivative is an ester, amide, salt, hydrate or solvate of said 5- aminolevulinic acid, to kill said malignant tumor.

*4* 13. (previously presented): The method of claim *12*, wherein the malignant tumor is detected and treated in a living host.

*5* 14. (previously presented): The method of claim *10*, wherein the killing of said malignant tumor is by a photokinetic method.

*6* 15. (previously presented): The method of claim *12*, wherein the killing of said malignant tumor is by a photokinetic method.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/445,963

Claim 16. (canceled).

Claim 17. (canceled).

7 18. (previously presented): The method of claim 10, wherein the carbon isotope is used and it is the  $^{13}\text{C}$  or  $^{14}\text{C}$  isotope.

8 19. (previously presented): The method of claim 18, wherein the carbon isotope is used and it is the  $^{13}\text{C}$  isotope and the NMR is  $^{13}\text{C}$ -NMR.

9 20. (previously presented): The method of claim 12, wherein the carbon isotope is used and it is the  $^{13}\text{C}$  or  $^{14}\text{C}$  isotope.

10 21. (previously presented): The method of claim 20, wherein the carbon isotope is used and it is the  $^{13}\text{C}$  isotope and the NMR is  $^{13}\text{C}$ -NMR.

11 22. (currently amended): The method of claim 10, wherein the nitrogen isotope is used and it is the  $^{14}\text{N}$  or  $^{15}\text{N}$  isotope.

*7-8-05  
See Examiner's  
Comments*  
23. (previously presented): The method of claim 22, wherein the nitrogen isotope is the  $^{15}\text{N}$  isotope and the NMR is  $^{15}\text{N}$ -NMR.

12 24. (currently amended): The method of claim 12, wherein the nitrogen isotope is used and it is the  $^{14}\text{N}$  or  $^{15}\text{N}$  isotope.

*7-8-05  
See Examiner's  
Comments*  
25. (previously presented): The method of claim 24, wherein the nitrogen isotope is the  $^{15}\text{N}$  isotope and the NMR is  $^{15}\text{N}$ -NMR.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/445,963

Claim 26. (canceled).

Claim 27. (canceled).

13 28. (previously presented): The method of claim 10, wherein said derivative is used and said derivative is the ester.

14 29. (previously presented): The method of claim 12, wherein said derivative is used and said derivative is the ester.

15 30. (previously presented): The method of claim 10, wherein said derivative is used and said derivative is the amide.

16 31. (previously presented): The method of claim 12, wherein said derivative is used and said derivative is the amide.

17 32. (previously presented): The method of claim 10, wherein said derivative is used and said derivative is the salt.

18 33. (previously presented): The method of claim 12, wherein said derivative is used and said derivative is the salt.

19 34. (previously presented): The method of claim 10, wherein said derivative is used and said derivative is the hydrate.

20 35. (previously presented): The method of claim 12, wherein said derivative is used and said derivative is the hydrate.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/445,963

~~21~~ 36. (previously presented): The method of claim ~~10~~, wherein said derivative is used and said derivative is the solvate.

~~22~~ 37. (previously presented): The method of claim ~~12~~, wherein said derivative is used and said derivative is the solvate.

~~23~~ 38. (previously presented): The method of claim ~~10~~, wherein the detecting and treating are conducted using a total dose of from 10 mg to 10 g per kg body weight.

~~24~~ 39. (previously presented): The method of claim ~~12~~, wherein the detecting and treating are conducted using a total dose of from 10 mg to 10 g per kg body weight.

~~25~~ 40. (previously presented): The method of claim ~~10~~, wherein the detecting and treating are performed with the same 5-aminolevulinic acid or a derivative thereof in which at least one carbon atom of said 5-aminolevulinic acid is a carbon isotope and/or a nitrogen atom in its amino group is a nitrogen isotope, and wherein said derivative is an ester, amide, salt, hydrate or solvate of said 5-aminolevulinic acid.

~~26~~ 41. (previously presented): The method of claim ~~12~~, wherein the detecting and treating are performed with the same 5-aminolevulinic acid or a derivative thereof in which at least one carbon atom of said 5-aminolevulinic acid is a carbon isotope and/or a nitrogen atom in its amino group is a nitrogen isotope, and wherein said derivative is an ester, amide, salt, hydrate or solvate of said 5-aminolevulinic acid.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/445,963

27 42. (previously presented): The method of claim 10, wherein said malignant tumor exists in a deep region of tissue.

28 43. (previously presented): The method of claim 12, wherein said malignant tumor exists in a deep region of tissue.

Claim 44. (canceled).

Claim 45. (canceled).

29 46. (previously presented): The method of claim 10, wherein the malignant tumor is detected and treated in a living host.